

XIV. *Descriptions of nine new Species of Amphipodous Crustaceans from the Tropical Atlantic.* By the Rev. THOMAS R. R. STEBBING, M.A.

Received November 1st, 1892, read December 20th, 1892.

[PLATES LI.-LV.]

THE specimens described in this paper were obtained by Mr. John Rattray, during the expedition of the 'Buccaneer,' the telegraph-ship belonging to the Silvertown Company, when engaged in surveying for the laying of cables on the West Coast of Africa. The scientific investigations made during the expedition were arranged for, and the expenses met by, Dr. John Murray, the Director of the 'Challenger' Commission, and Mr. J. Y. Buchanan, the latter of whom accompanied the ship.

Tribe *HYPERIDEA*.

Family *SCINIDÆ*, Stebbing, 1888.

The head is small, of less width than the peræon. The eyes are small. The first antennæ are large, straight, generally (perhaps always) three-jointed, attached at the front corners of the head. The second antennæ are attached to the underside of the head; they are rudimentary in the female, but in the male become long and slender, after being at an early stage short and curved one over the other. The mandibles are without palp. Both pairs of maxillæ are well developed. The maxillipeds have a small inner plate, and two large outer plates which are distally narrowed. Both first and second gnathopods are simple. Of the peræopods the third are generally the longest, the fifth always the shortest. The pleon is narrower than the peræon. The fifth and sixth segments are generally (perhaps always) coalesced. In the uropods only the outer branch is free. The telson is small.

Definitions of this family have been given recently by Dr. Bovallius, Professor Chun, and Professor Sars. With all of these the above substantially agrees. Chun includes the character that the body is not compressed, which will not apply to the new species *Scina stenopus*, and is rather vague in its application to other species. Sars speaks of the first antennæ as divergent, an epithet which is unsuitable, since, though capable of great divergence, they can lie with the inner margins perfectly parallel, and one may even suspect that this is their natural position when at rest. Both Bovallius and Sars speak of the second antennæ in the male as angularly bent. This angulation, it may be remarked, is distinct from the zigzag folding familiar in several other Hyperid genera. As Streets has explained, it merely refers to a single bend at one point of the

long slender flagellum, when that, not being in use, is laid for security beneath the animal's body. For the two species which Dana named *Clydonia gracilis* and *Clydonia longipes*, Bovallius accepts from Dana a division between the fifth and six segments of the pleon. Streets, in describing what he regarded as a specimen of *Clydonia longipes*, says that the fifth and sixth segments in question are apparently consolidated. Since in all the species which have been recently examined these two segments are coalesced, it is most probable that their separation was not observed by Dana, but taken for granted, contrary to the actual fact, although according to what is normal in the Gammaridea, to which he assigned the genus *Clydonia*.

Genus SCINA, Prestandrea, 1833.

1833. *Scina*, Prestandrea, Effemeridi scientifiche e letterarie per la Sicilia, t. vi. p. 10.
 1840. *Tyro*, Milne-Edwards, Hist. Nat. des Crustacés, t. iii. p. 80.
 1849. *Clydonia*, Dana, American Journal Sci. and Arts, vol. viii. no. 22, p. 140.
 1885. *Tyro*, Bovallius, On some forgotten Genera among Amph. Crust. p. 12.
 1887. „ Bovallius, Monogr. Amph. Hyperidea, K. Svensk. Vet.-Akad. Handl. Bd. xxi. no. 5, p. 5.
 1888. *Scina*, Stebbing, Challenger Amphipoda, pp. 151, 1271, &c.
 1889. *Fortunata*, Chun, Akad. der Wissenschaften zu Berlin, Math. u. naturwiss. Mitth. p. 342.
 1889. *Scina*, Chun, Zoologischer Anzeiger, Jahrg. xii. no. 308, p. 286.
 1890. „ G. O. Sars, Crustacea of Norway, vol. i. pt. 1, p. 18.

The other references will be found in the Monograph of the Hyperidea by Bovallius and in the Report on the 'Challenger' Amphipoda. The genus at present stands by itself, and may therefore be content with the character of the family. Nevertheless, Bovallius and Sars have drawn out separate generic descriptions. Bovallius in his definition speaks of the third peræopods as "transformed into jumping-legs." For such a function they do not seem particularly well suited. The long and strong second joint is directed forward and upward, and is prolonged into a spine-like process at the apex of the front margin. According to Professor Chun, by aid of these processes, the animal attaches itself to a free-swimming hydrozoon, and floats about without exertion after the fashion of *Phronima* and various other Hyperidea. Sars states that the third peræopods are the longest, which is indeed usually a conspicuous feature; but the *Scina bovallii* of Chun is said to have the fourth peræopods somewhat longer than the third, and *Scina clausi* (Bovallius) to have the fourth as long as or a little longer than the third. Of the uropods Sars declares the first and second pairs to be "simple, with the peduncle not defined." Yet both in his own species, *Scina borealis*, and in all the other known species, with one or two doubtful exceptions, the extent of the peduncle is defined in all the uropods by the presence of a free outer branch, albeit that branch is sometimes extremely small and spine-like. There are more or less conspicuous gland-cells in the limbs of the peræon and the uropods. The pleopods

are provided with a couple of serrate coupling-hooks on each peduncle, and a single cleft spine on the first joint of the inner ramus. At least in general there are fewer joints to the inner than to the outer ramus.

The species belonging to this genus are now numerous. Those earliest described remain, and will probably for ever remain, involved in much obscurity. *Astacus crassicornis*, Fabricius, 1775, *Tyro cornigera*, Milne-Edwards, 1840, and *Tyro sarsi*, Bovallius, 1885, all with large upper antennæ, may very likely be one and the same species, which I am disposed to call *Scina cornigera*, rejecting the earlier *crassicornis* on the ground of the too uncertain identity. The *Scina ensicorne*, Prestandrea, 1833, from the Mediterranean, may yet be identified, but the *Clydonia gracilis* and *Clydonia longipes* of Dana are so figured that, in the absence of the type specimens and with our present knowledge of the genus, I do not think they will ever be reconciled with any actual species. Professor Chun recognizes that his *Scina lepisma* stands near to the Mediterranean *Scina marginata* of Bovallius, but considers it distinct because the upper antennæ are shorter, with strikingly strong armature of filaments, and because it has four pairs of branchial vesicles instead of six. There does not, however, appear to be really any difference in the armature of the antennæ, and the difference in length is not by any means considerable. As for the branchial vesicles, in *Scina marginata* these are said to be found on all the limbs of the peræon from the second to the seventh, but in *Scina lepisma* only from the fourth to the seventh. This would constitute a very important distinction, but the fact stands in need of confirmation. These vesicles are very easily detached and lost in the handling of a specimen, and there is a great improbability that a species should be without them on the second and third pairs of limbs, and yet have them on the seventh pair. Thus the validity of the species *lepisma* is left in some doubt. Of his other species, *Scina bovallii*, Professor Chun says that it has four pairs of branchial vesicles, "between the third to the seventh pairs of trunk-limbs;" and this he considers one of its chief distinctions from *Scina borealis*, Sars, and *Scina clausi* (Bovallius), both of which have the normal set of branchial vesicles extending from the second gnathopods to the fourth peræopods. Sars is rather inclined to regard *Scina clausi* as a synonym of *Scina borealis*, but both *clausi* and *bovallii* may be distinguished from *borealis* by different proportions in some of the limbs.

Arithmetic shows that a pack of fifty-two cards may be dealt out in a bewildering number of ways. It may be noticed, therefore, that in the genus *Scina* the animals have on the peræon seven pairs of limbs, each limb having six free joints, and that they have also a pair of antennæ consisting of peduncle and flagellum, and three pairs of uropods, each uropod having one branch free from the peduncle. Thus there are fifty-two pieces to be played with, each of which may be relatively long or short, broad or narrow, simple or variously armed. Relatively also to each other these eleven pairs of appendages may go through any number of variations

of size. Without taking into account other features, such as the eyes and the telson, or the general shape and armature of the body, it may be left to the arithmetician to calculate, if he can, how many species may be framed from the given conditions. Some praise should be allowed to the moderation of nature and of naturalists, in that, with such facilities at command, they have been contented as yet with creating only twenty-one species in the genus, including in that number all the doubtful names and seven new species instituted in the present paper. Probably not more than fifteen of the twenty-one can be sustained. Of these there are some which can only be distinguished from one another by close comparison of various details, but *Scina marginata* (Bovallius) is at once marked out by having the apex of the hands in the gnathopods produced. No other species, unless *Scina lepisma* be distinct from *Scina marginata*, shares this peculiarity. *Scina acanthodes*, n. sp., is unique in the dentate armature of the peræon and pleon. *Scina stenopus*, n. sp., is unique in the enormous elongation of the peduncles of the uropods, only the otherwise very different *Scina acanthodes* making any approach to it in this respect. Bovallius considers the *Scina cornigera* of Milne-Edwards uniquely devoid of outer branches to the third uropods; but in that case I take it for granted that they were present though not observed, such an oversight easily occurring when the more striking features of the animal were attracting attention by their novelty. *Scina unciipes*, n. sp., is unique in the blunt-ended finger of its fifth peræopods, though it agrees more or less with *Scina marginata* in the unwonted thickness of those limbs. The species at large may be roughly divided into two groups—one in which, as in *Scina cornigera*, the first antennæ are of very great length, the other in which, as in *Scina borealis*, they are of much more moderate extent. In the determination of species it is useful also to note whether the second joint of the third peræopods is dentate on both sides or only on one, and whether the finger of the fifth peræopods is hooked or simple. The serrature or denticulation of the margins of the uropods varies in different species, but the details are often microscopic. The number of species is at present rather surprisingly large compared with the number of specimens known. They have been instituted on the supposition that the proportional sizes of the antennæ, of the joints of the limbs, and of the uropods are fairly constant for each species. Should this supposition prove unsound, a further revision would doubtless be required. As the list at present stands, if it be right to cancel for different reasons the names *crassicornis*, *gracilis*, *longipes*, *sarsi*, *lepisma*, and to leave *ensicorne* in suspense, the species remaining will be *cornigera*, Milne-Edwards, *borealis*, *atlantica*, *clausi*, *marginata*, *tullbergi*, and *pacifica* of Bovallius, *bovallii* of Chun, and *acanthodes*, *stenopus*, *ædicarpus*, *rattrayi*, *concors*, *similis*, and *unciipes* of the present paper.

SCINA ACANTHODES, n. sp. (Plate LL.)

The head in front is deeply emarginate, forming two blunt lobes, behind which it is dorsally traversed by a curved line. The peræon increases in width to the fourth

segment. The boundary between the first and second segments is rather indistinct. All the segments, except the first, have on the hind margin a strongly projecting median tooth. The pleon is much narrower than the peræon, but similarly armed with a median tooth on each of the first three segments, of which the postero-lateral angles appear to be acute. The fourth segment is short, with a thin semicircular shield arising from near the front margin and covering the chief part of the segment. The coalesced fifth and sixth segments are together not longer than the fourth. The small telson is broader than long, distally truncate, not narrowed, with a setule on either side of the centre of the distal margin; folded under is a thin curved lobe about half the length of the telson. That the fold is natural and not accidental is evident from the uninterrupted double marginal lines running round the sides and end of the other portion. No eyes were perceived.

The first antennæ are longer than the head and peræon together. The long first joint of the flagellum has serrate edges, with numerous hyaline bacilli along the whole length and spines at intervals; the terminal joint is quite small.

The second antennæ (in the female) are short, obscurely three-jointed, the first joint being a broad tubercle, the other two joints linear.

The mandibles are of the usual simple character, ending in narrow, finely denticulate cutting plates. Of the other mouth-organs as much as could be made out is shown in the figures; they are not suggestive of anything exceptional, apart from the figure *x*, which does not agree with anything hitherto described for this genus. Whether it may be a part of the maxillipeds I have not been able to determine.

The first gnathopods. The side-plates are bluntly pointed in front; the second joint has the edges almost parallel, with minute spinules along the front one; the short third joint has a terminal spine; the fourth joint is very little longer than the third; it has spinules on the hind margin and two apical spines; the fifth joint is a little longer than the sixth, the two together being longer than the second; each carries a single spine and a pair of spines at intervals on the hind margin; the sixth joint is slightly curved; the finger is straight and slender, nearly half the length of the sixth joint.

The second gnathopods nearly resemble the first, but the side-plates are larger, the second, fifth, and sixth joints longer, and the finger seemingly shorter. The branchial vesicles are broader than the second joint, and more than two-thirds as long. The marsupial plates of the specimen are smaller than the branchial vesicles, and successively smaller to the last, the fourth, pair. Of the five pairs of branchial vesicles the third is the largest.

The first and second peræopods are much longer than the gnathopods, with similar but larger side-plates. The second joint is not wider and not greatly longer than the fifth; the fourth joint is rather longer than the sixth. There are no strong marginal spines. The finger is minute, clasping between two sharp forward-directed teeth at the apex of the hind margin of the sixth joint. In all the limbs the muscles are short,

leaving plenty of space for the glandular secretion, which probably finds an exit just above the finger-tip.

Third peræopods. The side-plates are produced in a spine-like manner both forward and backward, the hinder processes being very prominent features in the appearance of the animal, extending back considerably beyond the sixth segment. The second joint has five spines on the hind margin, and three spines on the front margin, the apical tooth of which reaches almost as far as the small apical tooth of the short third joint. The fourth joint carries eleven or twelve spines on each margin, and is considerably longer than the long second joint. The remainder of the limb was missing.

The fourth and fifth peræopods are alike. The side-plates of the fourth are the larger, with a backward-directed point, which is evanescent in the next segment. The joints are nearly as in the second peræopods, but the sixth joint is longer and without the apical teeth, and the finger is more produced.

The pleopods carry two very small coupling spines, and have five or six joints to the inner branch, and six or seven to the outer branch, the large first joint of the inner branch carrying a long cleft spine.

The uropods are narrow and elongate, the first a little longer than the second, and the second than the third; the first has a minute serration of the outer margin, and numerous small spines on the lower half of the peduncle; its coalesced inner branch is about two sevenths of its length; the outer branch is imperfect, less than half the length of the inner; the second pair have a few spines on the outer and several on the inner margin, the coalesced branch a little damaged, but probably like that in the preceding pair, the free outer branch longer than in the preceding pair and probably more than half as long as the inner; the third pair have three spines on the outer margin, the free outer branch shorter than the inner, but both damaged at the apex.

From the front of the head to the extremity of the uropods the specimen scarcely measured one-tenth of an inch. It could not be persuaded to lie flat, though it would readily stand on its head. Neither body nor appendages showed any inclination to break, notwithstanding pressure repeatedly applied, so that the texture must be tolerably tough. That the third peræopods were already broken was no doubt due to their exceptional length.

Habitat. Atlantic. Lat. $7^{\circ} 54'$ N., long. $17^{\circ} 25'$ W. Taken with the tow-net from a depth of five fathoms, between 7.20 and 8.20 P.M.

The specific name, from the Greek *ἀκανθώδης*, refers to the spiny armature of the body, a feature so uncommon among the Hyperidea.

SCINA STENOPUS, n. sp. (Plate LII. A.)

The head is slightly emarginate between the antennæ. The first four segments of the peræon were to a certain extent twisted and telescoped, so that their relative lengths could not be accurately ascertained. The last three segments of the peræon

are equal in length to the first three of the pleon. These latter have the posterolateral angles well rounded. The next three segments of the pleon are short, together scarcely longer than the third segment. The fifth and sixth segments are apparently coalesced, and the telson seen in profile seems to be narrow, about equal in length to the sixth segment.

The eyes are small, consisting of about a dozen ocelli; the colour in spirit very pale.

The first antennæ are longer than the whole body from head to telson, with the first joint or peduncle stout, not very much longer than broad. In the elongate, straight, tapering flagellum no division could be discerned even near the apex. The inner margin is fringed with numerous filaments, which when highly magnified are seen to be broad and round-ended. The outer margin carries many spinules.

The second antennæ (of the female) are minute, planted near the hind margin of the head, and only extending forward as far as the eyes. A trace of division into two or three joints could rather be imagined than seen.

The mouth-organs form a small, nearly circular, group, the pointed apex of the epistome scarcely reaching halfway from the back to the front of the head.

First gnathopods. The side-plates of these and the following limbs are small and but faintly distinguished. All the limbs of the peræon are exceedingly narrow, and the first gnathopods are the shortest. Of its joints the second is the longest, the third the shortest. The fourth, which is not twice as long as its breadth, is distinguished by an armature of prickles. The fifth is longer than the sixth; they carry a few setules, and are together longer than the second joint; the sixth has a small tooth at the apex. The finger is very slender, a little over half the length of the preceding joint.

Second gnathopods. The branchial vesicles are small. The limbs are not very different from the preceding pair, but with the second, fifth, and sixth joints longer, and the fourth not prickly.

First and second peræopods. The branchial vesicles are slightly larger than those of the preceding, and smaller than those of the following limbs, those of the large third peræopods being the largest. These slender and unarmed limbs have all the joints, except the third and seventh, longer than in the gnathopods, and the fourth joint longer than the fifth. The finger is small.

Third peræopods. The elongate second joint is less than half the total length of the limb, armed with spines on both margins, those on the front being the larger, and this margin ending in a tooth which projects beyond the similar but smaller tooth of the short third joint. The fourth joint is considerably longer than the fifth, the two together being a little shorter than the second. The sixth is considerably shorter than the fifth, and the finger is minute.

Fourth peræopods. The branchial vesicles, though smaller than the preceding pair, are larger than any of the others. The limbs are unarmed, more slender than the preceding pair and shorter, but not very greatly so. The proportions of the joints are

not very dissimilar, but the fourth and fifth together are a little longer than the second. The length of the limb is equal to that of the first five joints of the third peræopods. The sixth joint is longer than in that pair.

Fifth peræopods. The slender, unarmed limbs are about two-thirds the length of the fourth peræopods, which they much resemble in the proportions of the joints. The finger is minute, apparently hooked.

Pleopods. The peduncles are strong. The two coupling-hooks are minute, with three pairs of backward-directed points to each. The slender rami have seven or eight joints with the usual setæ, and the cleft spine on the first joint of the inner branch.

Uropods. These are subequal to one another and half the length of the first antennæ. No outer ramus could be distinguished in the first pair; the second have a very small one, little more than a quarter the length of the coalesced inner branch, which is itself not quite a fifth of the total length of the uropod. The third pair are slightly the shortest. The outer branch is fully two-thirds the length of the inner, which is a fifth of the total length of the uropod. The first and third have spines on both margins, the second appeared to have them only on the outer margin. The outer branch of the third pair has spines on the inner margin.

The length is half an inch, the first antennæ measuring one-fifth of an inch, the body nearly the same, and the uropods a tenth.

The specific name, from the Greek στερόπους, meaning narrow-footed or narrow-legged, speaks for itself.

Habitat. Atlantic. Lat. $7^{\circ} 1' 1''$ N., long. $15^{\circ} 54'$ W. Taken in the daytime from a depth of 100 fathoms.

Of species hitherto described not one makes any very near approach to the present, unless possibly Dana's *Clydonia longipes* from the Pacific, but even in that the uropods are entirely different.

SCINA ŒDICARPUS, n. sp. (Plate LII. B.)

The head has the front shallowly emarginate. The peræon is dilated, with the last two segments narrowing rather abruptly. The pleon is narrow, and has the fifth and sixth segments coalesced. The telson is small; owing to its transparence its outline could not be clearly discerned.

The eyes are small, and pale in spirit.

The first antennæ are equal in length to the peræon and first three segments of the pleon. They have the usual stout one-jointed peduncle and two-jointed flagellum, the long first joint carrying minute spines on the outer margin and long filaments on the inner.

The second antennæ are folded in a curve across the underside of the head above the mouth-organs. The first three joints are short, the basal one partially soldered to the head; the fourth joint is not twice as long as the third; the fifth joint is rather longer

than the preceding four together, and represents the flagellum in an early stage. The condition of these antennæ indicates that the specimen is a male not fully adult.

The first gnathopods have the fifth joint rather longer than the sixth. As in the other limbs there is scarcely any armature, but the short fourth joint has a few spinules and the two following joints a few slender setæ.

The second gnathopods have the second joint rather longer than that in the first pair, the fourth joint smooth, the fifth shorter than the sixth.

The first peræopods have the fourth joint much longer than that of the gnathopods, but much shorter than the fifth joint, which is dilated and almost entirely glandular; the following joint is slender.

The second peræopods scarcely differ from the first, except in having the fifth joint not dilated.

The third peræopods have the second joint longer than all the rest of the limb, with spine-like serrations on both margins, those on the front the stronger. The apical tooth is produced much beyond the short third joint. The fourth joint is decidedly longer than the fifth, which is not quite three times as long as the sixth. The finger is minute and bent.

The fourth peræopods have the second joint little more than half the length of that in the preceding pair; the fourth joint longer than the fifth, and these two together a little longer than the second. The sixth joint is half as long as the fifth. The finger is very small, strongly curved.

The fifth peræopods are slender, about half as long as the fourth, and a third as long as the third pair. The fourth, fifth, and sixth joints are subequal one to another, and two of them together are subequal to the second joint. The finger is minute, seemingly retractile.

The first uropods are rather longer, while the other two pairs are rather shorter, than half the upper antennæ. In all, the peduncles are elongate, but shorter than the coalesced inner ramus. The outer ramus in the first two pairs is like a small spine; in the third pair it is slender, but rather longer than half the inner ramus. The marginal armature in all three pairs is extremely minute, except for a single spine or process on the inner margin of the first pair a little higher up than the outer ramus.

The total length a little exceeds a fifth of an inch, the measurement without the antennæ and the uropods being just one tenth of an inch.

Habitat. Atlantic. Lat. $7^{\circ} 1' 1''$ N., long. $15^{\circ} 54'$ W. Taken in the daytime from a depth of 100 fathoms.

Branchial vesicles were present on the first, second, third, and fourth peræopods, but not on the second gnathopods. No stress, however, can be laid on this deficiency, since on one side of the specimen the vesicles were absent also from the first and second peræopods.

From *Scina atlantica* (Bovallius), to which the present species makes the nearest

approach, as well as from all other known species of the genus, it is distinguished by the proportions of the third peræopods, which are unique in having the second joint longer than all the remainder of the limb. The specific name, from the Greek *οἰδεῖν*, to swell, and *καρπός*, wrist, refers to the wrist or fifth joint of the first peræopods, which is more tumid than usual, though in this genus it is normally glandular. Dr. Bovallius has noticed that in species of *Rhabdosoma* the females sometimes have the fourth and fifth joints of the first and three following peræopods "inflated and almost egg-shaped, owing to a strongly developed glandular mass surrounding the axis of the joint for the whole of its length." He supposes the development of these powerful glands to be periodical, and "to have some connection with the fixation of the eggs on the underside of the body." He had seen full-grown females of some species without the joints inflated at all, but had never seen females of the same species with eggs or young ones which had not at the same time those joints more or less inflated. He therefore deems it "probable that the development of these glands may be connected with the maternal functions of the animal." In the present species of *Scina* this glandular development occurs, it will be observed, in a male specimen.

SCINA RATTRAYI, n. sp. (Plate LIII. A.)

The head is broad, dorsally smooth, with the front margin between the antennæ faintly concave or perhaps straight. The segments of the peræon are broad, except the last two. The first four segments of the pleon are rather long, each subequal in length to the coalesced fifth and sixth segments, of which the part furnished by the fifth is abruptly narrower than the sixth. The telson is small and tongue-shaped. The length of the body from the front of the head to the end of the peræon is the same as that of the outstretched pleon to the end of the telson.

The eyes are minute, situated at the anterior corners of the head.

The first antennæ are nearly equal in length to the head and pleon. They are set wide apart. The first joint of the flagellum carries numerous filaments; the small and slender second joint is tipped with a long fine seta.

The second antennæ of the specimen are short, two-jointed.

The first gnathopods have the second joint equal in length to the three following together, and broader than the corresponding joint in any of the other limbs. The fourth joint has some minute prickles on the hind margin, and a long spine and a short one at its apex; the fifth is considerably longer and broader than the sixth, and is armed with numerous setæ or seta-like spines on the distal half of the front margin and along the hind margin, which carries a rigid spine near its apex; the sixth joint is straight and narrow, with flexible spines on both margins and on the surface. The needle-like finger is about half the length of the preceding joint.

The second gnathopods have a few spines but no prickles on the hind margin of the fourth joint, the fifth joint considerably shorter and very little broader than

the sixth; both these joints being armed with spines, but less densely than in the first pair. The finger is slightly curved, and is much less than half the length of the preceding joint.

The first peræopods have the second joint equal in length to the fourth and fifth together, the fourth rather more than half the length of the fifth. The latter, which is as usual specially glandular, is considerably broader and a little longer than the sixth joint. The finger is minute.

The second peræopods scarcely differ from the first.

The third peræopods have the second joint equal in length to the first antennæ minus the terminal joint. The front margin is produced into a short tooth, in advance of which are two spine-like processes; on the hind margin there are twelve of these processes. The third joint does not equal the breadth of the second; the fourth is slender, but in length remarkable, falling not far short of the second; the fifth is about two-fifths of the length of the fourth; the sixth less than half the length of the fifth. The finger minute.

The fourth peræopods are slender and very long, though shorter than the fifth; the second and fourth joints being much shorter than in the preceding pair, while the fifth joint is fully as long, and the sixth between two and three times as long as in that pair.

The fifth peræopods are very slender and short, the total length scarcely equalling that of the second joint in the preceding pair. The minute finger has a bulbous base and a slender hooked termination.

Branchial vesicles are attached to the first four pairs of peræopods, and apparently also to the second gnathopods. Some of the vesicles exhibit a rather unusual appearance, the centre seeming to be occupied by a series of little globules.

The pleopods have nine joints to the outer ramus and seven to the inner.

The uropods all have the peduncle considerably longer than the coalesced inner branch. The first pair are the longest, but do not reach quite so far back as the third; they have three spines spaced on the inner margin of the rather broad peduncle: the outer branch is represented by a small spine; the inner is finely serrate on the outer margin. The second pair have a similar outer branch, and the inner branch slightly serrate on the inner margin, and reaching back as far as or a little beyond that of the first pair. The third pair have two spines on the inner margin of the peduncle, the outer margin of the inner ramus serrate with six or seven tiny spinules; the outer ramus about four-fifths of the length of the inner, microscopically serrate, and carrying minute spinules on its inner margin.

The length of the specimen, including antennæ and uropods, is a quarter of an inch.

Habitat. Atlantic. Lat. $1^{\circ} 55' 5''$ N., long. $5^{\circ} 55' 5''$ E. Taken after 9 P.M. from a depth of 360 fathoms.

The specific name is given in compliment to John Ratray, Esq., under whose supervision the present collection of Amphipoda was made.

The only species which make any approach to the peculiar character of the third peræopods here exhibited are *Scina tullbergi* (Bovallius) and *Scina pacifica* (Bovallius), the latter of which may, according to Dr. Bovallius himself, be only a variety of the former. They do not, however, show so great an elongation of the fourth joint in the limbs in question, and they have very different proportions in the fourth peræopods, and exhibit many differences in the uropods. Of the pleopods in the two species above named Bovallius writes that the exterior ramus has seven joints, the interior nine joints. He also assigns fewer joints to the outer than to the inner ramus in the pleopoda of *Scina sarsii*, *Scina atlantica*, and *Scina marginata*, giving more to the outer than to the inner only in his species *Scina clausi*. In all the species of *Scina* which I have examined the pleopods have uniformly had the smaller number of joints on the inner, not on the outer ramus. It may be useful to mention that when the pleopod is detached from the animal the presence of the cleft spine on the inner branch distinguishes it with certainty from the outer.

SCINA CONCORDS, n. sp. (Plate LIII. B.)

The head is dorsally smooth, truncate between the antennæ, this part of the margin not at all concave, but by the rounding of its corners tending rather to become convex. The peræon is broadly ovate, together with the head equalling in length the pleon to the end of the coalesced segments. These latter, with the fourth pleon-segment, are together scarcely equal to half the length of the first three segments of the pleon. The fifth segment is much broader but not longer than the sixth, which is coalesced with it. The small telson is broader than its length, with the apex truncate, as in *Scina acanthodes*. The shape and proportions are unusual in this genus, but there is nothing in either case to indicate that the telson is either broken or abnormal.

The eyes are comparatively large, composed of some nine or more pairs of cones arranged in loose order.

The first antennæ are rather shorter than the peræon, with the first joint of the flagellum broad, four-sided, armed below with fourteen teeth, and on the outer margin with ten, the inner densely fringed with cylinders. The short second joint has four cilia on the inner margin, and is tipped with a fine seta not so long as itself.

The second antennæ are set well behind the first on the underside of the head, and have behind them a prominence, apart from which the peduncle is four-jointed, with the third and fourth joints longer than the first and second. The flagellum is of great length, though consisting, perhaps, of not more than eight or nine joints. The first of these is nearly as long as the peduncle, or not quite half the length of the upper antennæ; it narrows from a broad base, and is again a little enlarged apically; its upper or inner margin is fringed with decurrent cilia. The remaining joints are also

more or less ciliated, filiform, some longer, some shorter than the first, but the boundaries not always easy to detect, unless where the apical dilatation is seen broadside on.

The mouth-organs, as seen without dissection, show a broad and deep helmet-shaped epistome, rather small mandibles with finely-toothed cutting-edges, the plates of the maxillipeds elongate, with the apices not acute but rounded.

The first gnathopods have a short spine at the apex of the third joint, prickles along the hind margin of the fourth joint, and two spines at the apex; the fifth joint longer and much broader than the sixth, beset with several slender spines; the sixth joint narrow, especially in the distal half, and beset with many spines; the finger slender, nearly straight, about half the length of the sixth joint.

The second gnathopods have both the fifth and sixth joints slender, the sixth the longer.

The first and second peræopods have the sixth joint much shorter than the fifth, subequal in length to the fourth, but much narrower, with three minute spinules indenting the distal half of the hind margin. The finger is curved, much shorter than in the gnathopods.

The third peræopods have the long second joint much broader than it is in any of the other pairs, with its hind margin cut into about fourteen teeth, the front having only the apical one, and that small; the fourth joint is about three-quarters the length of the second, the fifth two-thirds the length of the fourth, and the very slender sixth a little shorter than the fifth. The finger is minute.

The fourth peræopods have the second joint three-quarters the length of that in the preceding pair; the fourth, fifth, and sixth joints each subequal to the fifth in the preceding pair and to each other, but the fifth slightly the longest of the three. The finger is very small, yet longer than in the other peræopods.

The fifth peræopods are small, but not strikingly slender. The second joint is more than half the length of that in the fourth pair; the fourth and fifth joints are subequal, together longer than the second; the sixth joint is much shorter and narrower than the fifth. The finger is small, consisting of a bulbous base and a short spine-like tip.

The branchial vesicles are rather large, showing the cell-structure rather conspicuously.

The pleopods have strong peduncles. The branches are shorter, with ten joints to the outer, and nine to the inner.

The uropods have the peduncles longer than the coalesced inner ramus, considerably in the second pair, less so in the first, and very slightly in the third. The first pair have the inner ramus serrate along much of the outer margin, the outer ramus resembling a considerable spine, equal to a fourth of the length of the inner; the second pair are serrate on the inner margin from a little above the commencement of

the ramus, the outer ramus spine-like, but longer than in the first pair, and equal to two-fifths of the inner ramus; the third pair are serrate on the outer margin of the inner, and the inner of the outer ramus, the latter being two-thirds as long as the former.

The specimen measures a little more than a fifth of an inch, by inclusion of the first antennæ and the uropods.

Habitat. Atlantic. Lat. $4^{\circ} 26' 7''$ S., long. $10^{\circ} 1' 8''$ E. Taken in the daytime from a depth of 135 fathoms.

From the closely allied species, *Scina tullbergi* and *Scina pacifica* of Bovallius, the present is distinguished by shorter fingers to the gnathopods and the first four pairs of peræopods, by a longer sixth joint in the third pair, and especially by differences in the uropods, the outer branch being here longer in the second than in the third pair instead of *vice versâ*, and the outer branch of the third pair being lanceolate and serrate instead of linear and smooth, and also much longer than in the other species. The difference in the shape of the telson might be considered to outweigh all the other distinctions, but its very peculiarity arouses some suspicion that the shape may be accidental. The specific name refers to the near agreement of this with the species reported from Cape Horn and from the Pacific, at Corinto, Nicaragua.

SCINA SIMILIS, n. sp. (Plate LIV. A.)

The head is dorsally smooth, truncate or even slightly convex between the antennæ. The length of the head and peræon equals that of the pleon to the tip of the telson. The fifth and sixth segments of the pleon are coalesced. The telson is narrowly triangular, about a third of the length of the peduncle of the third uropods. The ovaries extend backwards to the end of the sixth peræon-segment.

The eyes appear to be composed of nine ocelli, each ocellus consisting of four cones. In the present condition of the specimen these four cones seem to be encircled by a ring, and are separated one from another by a cross-shaped interval.

The first antennæ are equal in length to the last five segments of the peræon. The first joint of the flagellum has seven spiniform processes along the outer margin and a larger number on the inner, over which the long and numerous filaments project. The slender second joint is tipped with a fine seta.

The gnathopods of both pairs agree closely with those of *Scina concors*, except that the fingers are proportionally a little longer.

The first and second peræopods have the sixth joint longer than the fourth, and nearly as long as the fifth. The finger is slender, curved, not a quarter of the length of the hand.

The third peræopods have thirteen teeth on the hind margin of the second joint, its front margin smooth, with an apical tooth a little longer than the third joint. The fourth joint is only a little shorter than the second apart from its apical tooth; the fifth

is a little more than half the length of the fourth; the sixth is about three-quarters the length of the fifth. The finger is small and slender.

The fourth peræopods have the fourth and sixth joints subequal to the fifth in the preceding pair, but the fifth joint shorter than either of these and about half the length of the second joint. Both the sixth joint and the finger are considerably longer than the corresponding parts in the preceding pair.

The fifth peræopods are slender, scarcely equal in length to the second joint in the third pair. The sixth joint is slightly shorter than the fourth or fifth. The finger is very slender, with only a small bulb at the base.

The first uropods have the peduncle equal in length to the coalesced inner branch, the outer margin of the peduncle more faintly serrate than that of the branch, the inner margin of both smooth; the outer branch is spine-like. The second uropods are more slender than the first, with peduncle and inner branch subequal, serrate only along the inner margin, and having a spine-like outer branch, which is a little thinner and a very little longer than that of the first pair. The third pair have the peduncles a little longer than the outer branch, but considerably shorter than the coalesced inner branch; the outer is two-thirds of the length of the inner branch; the outer margin of the inner and the inner of the outer branch are serrate.

The specimen, a female with setiferous marsupial plates, measures three-twentieths of an inch, antennæ and uropods included.

Habitat. Atlantic. Lat. $3^{\circ} 0' 8''$ N., long. $7^{\circ} 43'$ W. Taken at noon from a depth of 50 fathoms.

The specific name refers to the general likeness which this species presents to the species *tullbergi*, *pacifica*, and *concors*. Yet it differs from all three in the relative proportions of the joints of the fourth peræopods, and by the different character of the fifth peræopods, especially in regard to the finger; moreover, the proportions of the uropods are different, not to mention other marks of distinction which separate it from one or other of the species in question.

SCINA UNCIPES, n. sp. (Plate LIV. B.)

The outline of the head was probably broadly truncate between the antennæ, but owing to an accidental damaging of the specimen this cannot be affirmed with certainty. The telson is triangular, scarcely a third of the length of the peduncles of the third uropods.

The eyes resemble those of *Scina similis*.

The first antennæ are stout, equal in length to the hinder half of the pleon, from the base of the fourth segment to the extremity of the uropods. The first joint of the flagellum has twelve teeth on the outer margin and about sixteen on the inner, over which project some setules, and a rather slender supply of filaments. The second joint is only a small stump, without any setæ; but this is probably not its normal condition.

The second antennæ have at the base two short stout joints. The third is longer and more slender than either of these, and the fourth than the third, with a slight dilatation near the middle. The fifth joint is more slender than the fourth, but quite as long. The four remaining joints are together somewhat longer than the preceding joint. This form is no doubt a stage in the development of the antennæ of the male.

The gnathopods differ little from those of *Scina similis*. There are branchial vesicles attached to the second gnathopods and to the first four pairs of peræopods.

In the first and second peræopods the fifth joint is longer than the fourth or the sixth. The finger is much curved.

The third peræopods have twelve teeth on the hind margin and about the same number on the front, together with an apical tooth longer than the third joint. The fourth and fifth joints are subequal in length; together they are as long as the second joint apart from its apical tooth. The sixth joint is rather shorter than the fifth. The finger is minute, triangular, its apex forming a nail.

The fourth peræopods are shorter than the first or second. They have the fourth and fifth joints equal, the sixth shorter than the fifth and a little shorter than the corresponding joint in the preceding pair, while the finger is similar to that of the third pair, but rather stouter.

The fifth peræopods are robust, with the fourth joint longer than the fifth, and the fifth than the sixth. The finger is curiously shaped, thick at the base, then narrowing, and again widening, the widened extremity being closely beset by a pair of spines or sort of double nail.

The pleopods have nine joints to the outer and seven to the inner branch.

The first uropods reach beyond the second, nearly to the extremity of the third. They have the peduncle rather shorter than the inner branch, of which the outer margin is minutely serrate; there are teeth sparsely set on the inner margin of both peduncle and branch. The outer ramus is a small thick spine. The second pair reach nearly as far as the outer branch of the third pair; they have the peduncle rather shorter than the inner branch, which is finely serrate on its inner margin; the outer branch is a little longer than in the first pair. The third pair have the peduncle nearly as long as the outer branch, which is fully four-fifths as long as the inner; the confronting margins of the two branches are serrate.

The specimen measures three-tenths of an inch.

Habitat. Atlantic. Lat. $7^{\circ} 54'$ N., long. $17^{\circ} 25'$ W. Taken between 6 and 7 P.M. from a depth of 50 fathoms.

The specific name refers to the peculiarly hooked finger of the fifth peræopods. From the more or less nearly related species, *Scina marginata* (Bovallius) and *Scina lepisma*, Chun, it is separated not only by the finger in question, but by the hands of the gnathopods, which are not apically produced into a sharp process.

SCINA CORNIGERA (Milne-Edwards).

1830. *Hyperia cornigera*, Milne-Edwards, Ann. des Sci. Nat. t. xx. p. 387.
 1840. *Tyro cornigera*, Milne-Edwards, Hist. Nat. des Crustacés, t. iii. p. 80.
 1885. „ *sarsii*, Bovallius, Some forgotten Genera of Amphipoda, p. 15, figs. 3, 3 a.
 1887. „ *sarsi*, Bovallius, Contributions to a Monograph of the Amph. Hyperideia, p. 9, pl. 1.
 figs. 1-17, pl. 2. figs. 1-10.
 1888. *Scina cornigera*, Stebbing, 'Challenger' Amphipoda, p. 1273, pl. 146.

The identity of *Tyro sarsii*, Bovallius, with *Tyro cornigera*, Milne-Edwards, cannot be insisted on as more than probable. If the later name is upheld, the earlier one might as well be cancelled.

A specimen more than half an inch in length was obtained by the 'Buccaneer' near the surface after dark, in the Atlantic, at lat. 5° 88' N., long. 14° 20' W., together with two other specimens of the same species.

SCINA ATLANTICA (Bovallius).

1885. *Tyro atlantica*, Bovallius, Some forgotten Genera of the Amphipoda, p. 14.
 1887. „ „ Bovallius, Contributions to a Monograph of the Amph. Hyperideia, p. 13,
 pl. 2. figs. 11-18.
 1888. *Scina atlantica*, Stebbing, 'Challenger' Amphipoda, p. 558.
 1889. „ „ Chun, Zool. Anzeiger, Jahrg. xii. no. 308, p. 289.

A specimen, apparently belonging to this species, was taken in the daytime from a depth of 100 fathoms, in the Atlantic, at lat. 7° 11' N., long. 15° 54' W. It measured fully a fifth of an inch. The first antennæ are unusually wide apart. The third peræopods in this specimen are unsymmetrical, so that a distinct species might be made out of each longitudinal half of the animal. The peræopod on the right side has the full number of joints, but all, except the third, are dwarfed. The preceding limbs are affected in a similar manner, but to a smaller extent.

SCINA PACIFICA (Bovallius).

1887. *Tyro pacifica*, Bovallius, Systematical List of the Amph. Hyperideia, p. 4.
 1887. „ „ Bovallius, Contributions to a Monograph of the Amph. Hyperideia, p. 25,
 pl. 3. figs. 10-17.
 1888. *Scina pacifica*, Stebbing, 'Challenger' Amphipoda, p. 587.

The differences between this species and the earlier *Tyro tullbergii*, Bovallius, 1885, are, as Dr. Bovallius himself remarks, very slight. A specimen, agreeing best with the *atlantica* form, was taken by the 'Buccaneer' with the tow-net at noon from a depth of 235 fathoms in the Atlantic, in lat. 4° 26' 7" S., long. 10° 18' E. The specimen measured three-twentieths of an inch, including as usual the antennæ and uropods. It contained about a dozen relatively large eggs.

It seems not a little remarkable that the only twelve specimens of the genus *Scina*

which I have been able to discover in the collection should include ten distinct species, of which no less than seven are new. One may without rashness forecast that, if species continue to multiply at this rapid rate, before long it will be thought necessary to relegate such forms as *acanthodes*, *stenopus*, and *uncipes* to so many separate genera.

Family RHABDOSOMIDÆ.

In his admirable work on the Oxycephalids, published in 1890, Dr. Bovallius separated from the Oxycephalidæ a new family which he named Xiphocephalidæ, distinguished by having the eyes planted between an outdrawn neck-like portion of the head and a long needle-shaped rostrum, by having the telson articulated to the preceding segment, by having the fifth pair of peræopods reduced to a single bladder-like joint, and by the absence of marsupial plates from the ovigerous female. Dr. Bovallius recognized that the 'Challenger' species *Rhabdosoma brevicaudatum*, as described, formed an exception, by having its telson coalesced with the preceding segment, and that his own genus *Tulbergella*, with the fifth peræopods four-jointed, was in that respect intermediate between the other Oxycephalidæ, which have those limbs fully jointed, and the Xiphocephalidæ, in which he supposed them to be limited to a single joint. After the publication of his book he came to England and inspected the type specimen of *Rhabdosoma brevicaudatum* at the British Museum. He persuaded himself that the telson was in fact articulated; but from a re-examination of the specimen I am myself convinced that the original description was correct, and that any appearance to the contrary is due to the transparency of the animal, making it somewhat difficult to perceive that the ventral suture is not dorsal. There is now to be described another short-tailed *Rhabdosoma*, in which likewise the telson is coalesced with the preceding segment. No stress, therefore, can properly be laid on the articulation of the telson as a family characteristic. In yet another new species of *Rhabdosoma* the fifth peræopods prove to be three-jointed, thus making a close approach to what is found in the acknowledged Oxycephalid genus *Tulbergella*. Even the neck-like constriction and the needle-shaped rostrum of the Rhabdosomid head are met with, though in far less exaggerated form, among the Oxycephalidæ, so that it seems inconsistent on the part of Dr. Bovallius to rely on these as points of distinction between the two families, while, on the other hand, he introduces into the Oxycephalidæ the very different-looking and blunt-snouted *Simorhyncotus*. The effect of the latter innovation is at least very awkward for the received nomenclature, since the family name, which signifies that the beak is sharp, is made to cover a genus the name of which signifies that the beak is blunt. There still remains for the Xiphocephalidæ the substantial distinction that the female is unprovided with marsupial lamellæ, and carries her eggs in the singular manner which Dr. Bovallius has described. The reason for changing the name Xiphocephalidæ into Rhabdosomidæ will be apparent from the

discussion of the synonymy of the solitary genus by which the family is at present represented. The change of name should not deter the student from consulting the exceedingly important morphological notes with which Dr. Bovallius has enriched his elaborate account of this family.

Genus RHABDOSOMA, Adams and White, 1847.

1847. *Rhabdosoma*, Adams & White, in White's List of Crustacea in the British Museum, p. 138.
 1848. „ Adams & White, Zoology of the Voyage of H.M.S. 'Samarang,' p. 63.
 1858. *Macrocephalus*, Spence Bate, Annals and Magazine of Natural History, ser. 3, vol. i. p. 361.
 1862. *Rhabdosoma*, Spence Bate, British Museum Catalogue of Amphipodous Crustacea, p. 344.
 1887. *Rhabdonectes*, Bovallius, Systematical List of the Amphipoda Hyperiidæ, Bihang till Kongl. Svenska Vet.-Akad. Handlingar, Bd. xi. no. 16, p. 39.
 1888. *Rhabdosoma*, Stebbing, 'Challenger' Amphipoda, p. 1606.
 1890. *Xiphocephalus*, Bovallius, The Oxycephalids, Royal Society of Sciences of Upsala, pp. 3, 116, &c.

For other references the two last-named works may be consulted. Dr. Bovallius assigns the genus, with the name *Xiphocephalus* and the date 1841, to the well-known zoologist Guérin-Méneville, on the authority of Eydoux and Souleyet¹. He quotes the passage in point from those authors, which is to the following effect:—"M. Guérin-Méneville, who has been kind enough to study this species with us, thinks that it will have to be separated from the genus *Oxycephale* to form a new generic division to which might be given the name of *Xyphicéphale*, which expresses its principal character; he bases his view on the fact that the true species of *Oxycephale* have the body shorter, of different shape, and on the fact that they have seven pairs of feet, of which two pairs are didactyle and five ambulatory."

It will be observed that here the genus is not instituted, but only an opinion given that it will eventually have to be, and the reasons for that opinion are stated. A suitable name for the genus thus foreshadowed is indicated by the French word *Xyphicéphale*. It is, or was, a common custom with French authors to give zoological names both in French and Latin. The Latin form is in this case not added, very likely because the authors intended to leave to Guérin himself the privilege of technically naming the genus, when a proper occasion should present itself. Of this privilege he appears to have never availed himself. The short Latin account of the species under discussion actually calls it "*Oxycephalus*, corpore perangusto, elongatissimo," &c. Under these circumstances I cannot bring myself to believe that the French form *Xyphicéphale* has any claim to be accepted as an authoritative name, and, since it is a monstrosity in spelling, its rejection should inspire but little regret. Three changes in it have to be made in order to polish it into *Xiphocephalus*, a name which Guérin-Méneville might have given, but did not. By discarding *Xyphicéphale* we are brought

¹ "Voyage autour du monde exécuté pendant les années 1836 et 1837 sur la corvette la 'Bonite.'" Zoologie. Tome 1^{er}, pp. 267-271, pl. iv. figs. 13-32. Paris (1841?).

to *Rhabdosoma* as the earliest name of the genus, and thus in a manner forced to change the name of the family from Xiphocephalidæ to Rhabdosomidæ.

Dr. Bovallius has very acutely unravelled the synonymy, and explained the distinctions between the species hitherto included in the genus *Rhabdosoma*. These are *Rhabdosoma armatum* (Milne-Edwards), 1840, *Rhabdosoma whitei*, Spence Bate, 1862 (the *Xyphi-céphale* of Eydoux and Souleyet), *Rhabdosoma lilljeborgi* (Bovallius), 1890, and *Rhabdosoma brevicaudatum*, of the 'Challenger' Report, 1888. Two new species, *R. piratum* and *R. brachyteles*, are now instituted.

RHABDOSOMA PIRATUM, n. sp. (Plate LV. A.)

The head is longer than the peræon and the first three segments of the pleon, as long as the whole pleon to the extremity of the uropods. The slender rostral part is nearly double as long as the part behind the first antennæ. Of the peræon-segments the fourth, fifth, and sixth are the longest. The first three segments of the pleon have the postero-lateral angles acute. The third is a little longer than either of the first two or the fourth, but a little shorter than that which is formed by coalescence of the fifth and sixth. The narrow tapering telson is considerably longer than any of the preceding segments, and reaches a little beyond the first uropods.

The eyes are of the character usual in the genus.

The first antennæ are very small, two-jointed, tipped with four short filaments.

No second antennæ were apparent in the specimen.

The first gnathopods are as usual minute, the second joint a little sinuous, the fourth scarcely larger than the third, the fifth sharply produced behind as far as the minutely toothed apex of the hand, which is narrower than the basal part of the wrist, but about as long. The finger is slender, very slightly curved, more than half the length of the hand.

The second gnathopods differ little from the first, but have the process of the fifth joint a little shorter, and the apical margin of the hand narrower.

First peræopods. The second joint is rather wider but not longer than the fourth; the fifth is narrower and shorter than the fourth, to which the slightly curved sixth is subequal in length though not in breadth. The finger is slender, curved, half as long as the preceding joint.

The second peræopods scarcely differ from the first, except in slightly greater length of some of the joints.

Third peræopods. The branchial vesicles are oval, more than half as long as the second joint of the limb and much wider than it. No trace of branchial vesicles could be perceived on any of the preceding limbs. In slenderness and general structure the third are very like the first and second peræopods, but they have the second, fourth, and sixth joints much longer, and the second decidedly longer than the fourth.

Fourth peræopods. The branchial vesicles are a little longer than the preceding pair.

The limbs differ very little from the third peræopods, unless the second joint be a little longer and the sixth a little shorter than in that pair.

Fifth peræopods. These are minute, with a shortly pear-shaped dilated portion that may be taken to represent the second joint, which is immediately followed by a much shorter and very much narrower piece carrying at its truncate apex the tiny finger, broad at the base, and slender at the strongly bent tip.

The pleopods are not very robust, with very small coupling-spines. The outer branch has four and the inner three or four joints.

The first uropods have the peduncle about four times as long as the branches, with sixty or more spinules along the inner margin and many along the outer one. The branches do not reach quite to the extremity of the telson: the outer is bordered with nine long spine-like teeth on each side; the inner, which is slightly the shorter, has eighteen teeth on the inner margin, small near the base and larger behind; the outer margin has eight teeth, and its upper part unarmed. The second pair have the peduncle subequal in length to the two coalesced segments of the pleon, the outer branch a little more than half as long as the inner, carrying about six teeth on each margin: the inner branch has six long teeth and one or two very small ones on each margin; it is coalesced with the peduncle, which has about fifteen small teeth on the inner margin, and apparently a smaller number on the outer. The third pair have the peduncles intermediate in size between those of the first and second pairs, subequal in length to the telson, not twice as long as the coalesced inner ramus, with many teeth on two margins, the upper ones small and distant. The outer ramus is not half as long as the inner; it carries six long teeth on the inner margin, and two or more on the outer. The coalesced inner ramus has about fourteen teeth on each margin.

The specimen was a little less than half an inch long.

Habitat. Atlantic. Lat. $0^{\circ} 38' 6''$ N., long. $6^{\circ} 25' 8''$ E., off St. Thomas's Island. Taken with the tow-net at noon from a depth of 10 fathoms.

The specific name is given in remembrance of the vessel by aid of which the present collection of Amphipoda was made.

RHABDOSOMA BRACHYTELES, n. sp. (Plate LV. B.)

The head is considerably shorter than the pleon to the extremity of the uropods, and has the rostral not greatly longer than the part behind the first antennæ. Of the peræon-segments the fourth, fifth, and sixth are the longest. The first three pleon-segments have the postero-lateral angles blunt, not produced backwards: these segments are subequal in length; the fourth is slightly shorter; the coalesced remainder of the pleon scarcely longer. The telson is very bluntly pointed, not so long as the combined fifth and sixth segments, with which it is itself coalesced.

The eyes and antennæ are as in the previous species, and the same may be said of the minute gnathopods.

The first and second peræopods have the second joint decidedly broader and longer than the fourth, which exceeds the fifth in length and is subequal to the sixth. The finger is slender, curved, fully half as long as the preceding joint.

The third and fourth peræopods have the second, fourth, and sixth joints longer than in the two preceding pairs; they also have rather large oval branchial vesicles, of which no trace could be detected on the preceding limbs.

The fifth peræopods are extremely minute, with the upper part only a little more dilated than the hand, of which the articulation is very indistinct. The finger has the usual broad base and slender hook.

The pleopods have the branches three-jointed.

The uropods are comparatively broad. The peduncles of the first pair are between two and three times as long as the branches, reaching beyond the telson, and are minutely denticulate on the inner margin; the branches are subequal, more or less strongly denticulate on both margins. The peduncles of the second pair extend but little beyond the base of the telson, and the coalesced inner branch does not reach its apex; the outer branch is more than half as long as the inner; both have denticulations on the distal halves of both margins. The peduncles of the third pair extend a little beyond those of the first; the coalesced inner branch is about as much longer as the free outer branch is shorter than the branches of the first pair; both are denticulate on the distal part of both margins.

The specimen was a quarter of an inch in length from tip of rostrum to the extremity of the uropods.

Habitat. Atlantic, near lat. $0^{\circ} 19' 2''$ S., long. $7^{\circ} 19'$ E. It was taken February 2, 1886, at 8.45 P.M., near the surface.

The specific name, from $\beta\rho\alpha\chi\acute{\upsilon}\varsigma$, short, and $\tau\acute{\epsilon}\lambda\omicron\varsigma$, end, refers to the shortness of the telson.

EXPLANATION OF THE PLATES.

PLATE LI.

Scina acanthodes (p. 352).

The full figure in dorsal view slightly inclined to the left, the line above it indicating the actual length of the specimen.

C. Dorsal view of cephalon and peræon.

Pl. Dorsal view of pleon.

a.s., a.i. Upper and lower antennæ.

m., mx. 1, maxp. Mandible, first maxilla, maxilliped, *in situ*.

m. Mandible, separated from the other mouth-organs.

x. A doubtful portion of the oral apparatus.

- gn.* 1, *gn.* 2. The first and second gnathopods.
prp. 1, 2, 3, 4, 5. The first, second, third, fourth, and fifth peræopods.
plp. Pleopod.
ur. 1, 2, 3. First, second, and third uropods.
 T. Telson.

PLATE LII.

A. *Scina stenopus* (p. 354).

Lateral view of the animal without the head, the natural size being indicated above. A separate ventral view is given of the head and antennæ, on the same scale as the lateral view of the rest of the animal.

For the separate figures the lettering is the same in all the Plates.

B. *Scina œdicarpus* (p. 356).

The full figure is given in dorsal view, as much of the ventral ganglionic chain being shown as could be seen through the transparent integument.

PLATE LIII.

A. *Scina rattrayi* (p. 358).

The full figure is given in dorsal view.

B. *Scina concors* (p. 360).

The full figure is given in dorsal view.

PLATE LIV.

A. *Scina similis* (p. 362).

The full figure is given in dorsal view, the outline of the ovaries appearing as seen through the transparent integument.

[B. *Scina uncipes* (p. 363).

The antennæ and the limbs of one side are all drawn to the same scale. The uropods are more highly magnified, being drawn on the same scale as the larger figures of *prp.* 3 and *prp.* 5.

PLATE LV.

A. *Rhabdosoma piratum* (p. 368).

The full figure is given in lateral view.

B. *Rhabdosoma brachyteles* (p. 369).

The full figure is given in lateral view.